

A new historical occurrence of the Hungarian meadow viper (*Vipera ursinii rakosiensis*) in Hungary

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Abstract

We present the discovery of the mummified remains of a *Vipera ursinii rakosiensis* collected in 1962 from a previously unknown occurrence location in Hungary. The first author took pictures of the specimen back in 2003; there is no information about the current whereabouts of the remains.

Key Words

habitat, historic range, Hungarian meadow viper, Mogyoród, review

Vipera ursinii rakosiensis (Méhely 1893) is a rare, endemic, and endangered taxon in the Carpathian Basin, with several documented occurrences in Hungary (Fejérváry-Lángh 1943; Dely and Janisch 1959; Dely 1983; Korsós et al. 2001). We have records of two separate populations from Hungary, one from northwest near Austria and one from central Hungary

(Fig. 1). The species was previously known from only one location north of Budapest, near Fót (#17 in Table 1, Fig. 1), based on a specimen housed at the Hungarian Natural History Museum and reported by Fejérváry-Lángh (1943).

The historical occurrences of *V. ursinii* in Hungary (Fig. 1) are listed in Table 1 below:

Table 1. Historical occurrences of *V. ursinii* in Hungary: Bács-Kiskun County: 1–6, Budapest: 7, and Győr-Moson-Sopron County: 8–23.

#	Locality	Coordinates	Reported in
1	Bugac	46.688°N, 19.683°E	Méhely 1911, 1912, Fejérváry-Lángh 1943, Dely and Janisch 1959, Dely 1983, 1987, Dely and Stohl 1984, Újvári 2000, Korsós et al. 2001
2	Izsák	46.802°N, 19.355°E	Fejérváry-Lángh 1943, Dely and Janisch 1959, Dely 1983, Újvári 2000
3	Kecskemét	46.899°N, 19.669°E	Boros 1957, Péntes 1960
4	Kunadacs	46.955°N, 19.286°E	Dely 1987, Újvári 2000
5	Kunpeszér	47.061°N, 19.277°E	Dely 1987, Újvári 2000
6	Tázlár	46.551°N, 19.516°E	Méhely 1912, Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Dely 1983, 1987, Dely and Stohl 1984, Újvári 2000
7	Budapest, Pest	47.497°N, 19.058°E	Méhely 1894, 1911, 1912, Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Péntes 1960, Dely 1983, 1987, Dely and Stohl 1984, Újvári 2000, Korsós et al. 2001
8	Hegyesalom	47.911°N, 17.154°E	Méhely 1912
9	Kimle	47.817°N, 17.368°E	Dely and Janisch 1959, Dely 1983, 1987
10	Lébény-pusztá	47.736°N, 17.389°E	Méhely 1912, Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Dely 1983, 1987, Korsós et al. 2001
11	Mosonszentmiklós	47.729°N, 17.429°E	Fejérváry-Lángh 1943, Dely and Janisch 1959, Dely 1983, 1987, Korsós et al. 2001

#	Locality	Coordinates	Reported in
12	Rábcakapi, Pintér-hany	47.708°N, 17.276°E	Sey 1964
13	Újrónafő	47.810°N, 17.201°E	Dely and Stohl 1984
14	Bugyi	47.225°N, 19.149°E	Dely and Janisch 1959
15	Dabas	47.187°N, 19.314°E	Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Dely 1983, 1987, Dely and Stohl 1984, Újvári 2000
16	Felsőbabád-puszta	47.260°N, 19.218°E	Méhely 1911, 1912, Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Péntzes 1960, Dely 1983, 1987, Dely and Stohl 1984, Korsós et al. 2001
17	Fót	47.617°N, 19.188°E	Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Dely 1983, 1987, Korsós et al. 2001
18	Gyón	47.180°N, 19.325°E	Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Dely 1983, 1987, Dely and Stohl 1984
19	Mántelek	47.177°N, 19.253°E	Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Dely 1983
20	Ócsa	47.299°N, 19.228°E	Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Péntzes 1960, Dely 1983, 1987, Dely and Stohl 1984, Újvári 2000, Korsós et al. 2001
21	Örkény	47.130°N, 19.433°E	Méhely 1911, 1912, Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Dely 1983, 1987, Újvári 2000, Korsós et al. 2001
22	Sári	47.211°N, 19.281°E	Fejérváry-Lángh 1943, Boros 1957, Dely and Janisch 1959, Dely 1983, 1987, Korsós et al. 2001
23	Tatárszentgyörgy	47.079°N, 19.378°E	Dely and Janisch 1959, Dely 1983, 1987

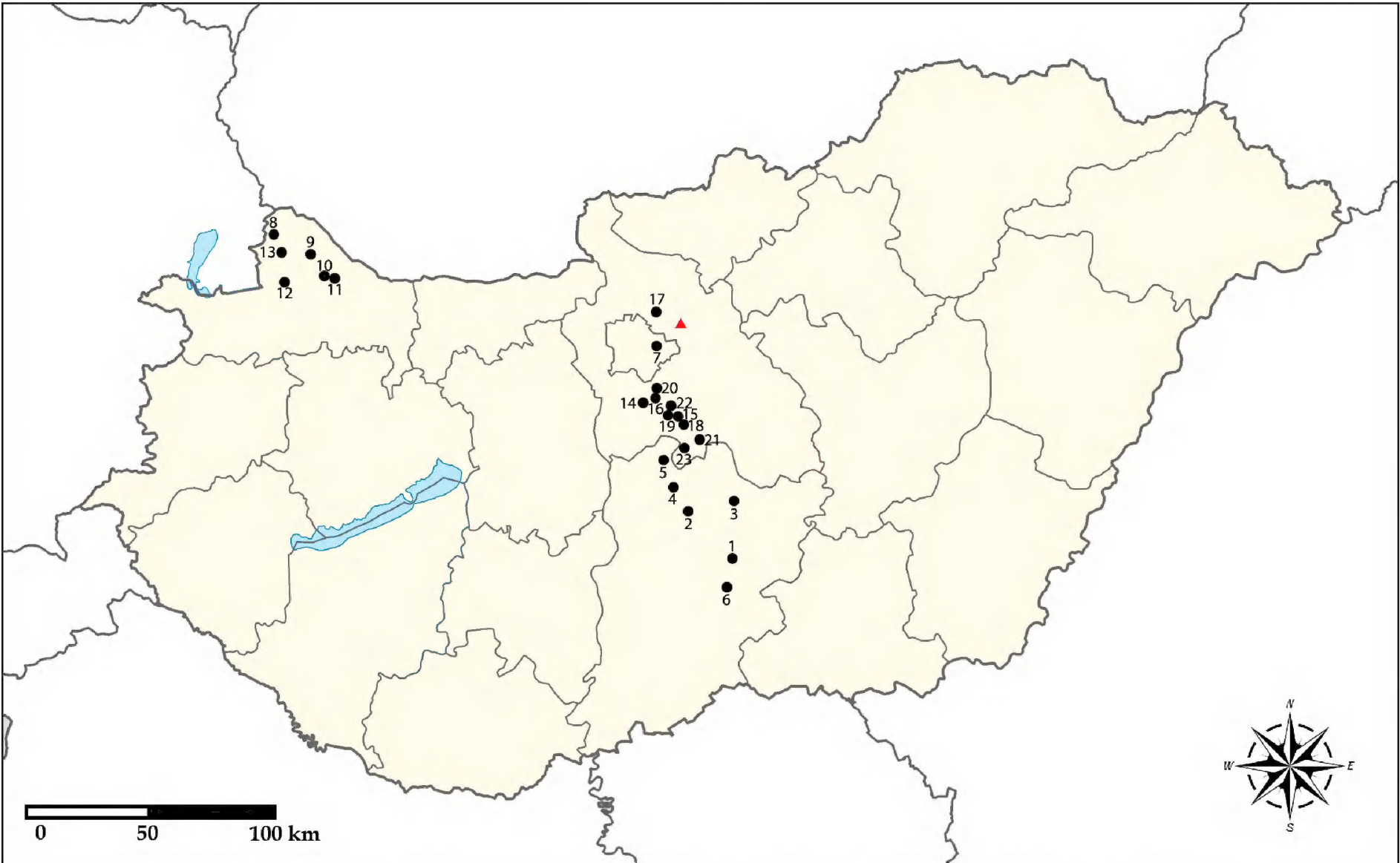


Figure 1. The historical occurrences of *Vipera ursinii* (black dots) and the new location (red triangle) in Hungary.

In addition to these previously known locations, the authors became aware of a new occurrence north of Budapest and east of the Fót site, in the region between Mogyoród and Gödöllő. In January 2003, the first author discovered and photographed a juvenile viper specimen measuring 18 cm in the collection of the Újpest Butterfly Museum (Budapest) during a visit. The collector had misidentified the specimen as a common European adder (*Vipera berus*) (Fig. 2). Only two viper species occur in Hungary, *V. berus* and *V. ursinii*, and they are not sympatric due to their different habitat requirements. The former species does not occur anywhere near Budapest, while the latter was discovered on the outskirts of the city (now urban areas) (Méhely, 1894). Moreover, the well-preserved coloration and pattern of the specimen we present clearly show that it belongs to *V. ursinii*. Based on this,

the significance of the present work lies in the fact that it has succeeded in supplementing the historical occurrences of the Hungarian Meadow Viper (*Vipera ursinii rakosiensis*) in Hungary with a previously unknown, new location. It should also be noted that the mentioned specimen has a single apical scale visible on the top of the head (Fig. 3), which is characteristic of *V. ursinii*, while *V. berus* typically has two (Dely, 1983). The other head shields of the specimen are as follows: Canthalia 2/2, Intercanthalia 5, Frontale 1, Parietalia 2, Supraocularia 1/1, Intersupraocularia 3/3. The examination revealed that the animal is a Hungarian Meadow Viper (*V. ursinii rakosiensis*). Additionally, we used the photograph to measure the tail length of the specimen; at 22 mm, it shows the individual as male, based on the data on newborn Hungarian vipers (Halpern et al. 2007).



Figure 2. The young Hungarian meadow viper found between Gödöllő and Mogyoród in 1962, which was initially misidentified as a common European adder (Photo: Gábor Szelényi).



Figure 3. Photo of the head of a young *Vipera ursinii rakosiensis* found between Gödöllő and Mogyoród in 1962 (Photo by Gábor Szelényi).

According to the late György Juhász (1946–2015; pers. com.), an amateur entomologist and founder and director of the Butterfly Museum where the specimen was housed and who labeled the viper specimen, the individual was collected by a 16-year-old nature enthusiast on July 6, 1962, in the Mogyoród area. The snake was found crushed on a dirt road in a region northwest of the Szentjakab (formerly Tölgyes) stop on the Gödöllő HÉV railway line, an area with weekend houses, small plots, and large-scale agricultural fields (Fig. 4). At the turn of the century, this was a grassy meadow area suitable for the meadow viper, which was gradually developed, becoming uninhabitable to this habitat specialist. There is

still an almost continuous green corridor between the former Fót and Mogyoród sites. The closest aerial distances to *Vipera ursinii* sites to the Mogyoród location are as follows: 7 km to Fót (historical occurrence), 12 km to Budapest, Káposztásmegyer (historical occurrence), 13 km to Budapest, Felsőrákosi rétek (historical occurrence), and 48 km to Dabas, Gyóni rét (recent occurrence). Still, finding the specimen's remains near Mogyoród does not prove that the individual lived in that location, as it could have been brought there from another location, for example, during hay transportation.

It is also worth mentioning that the specimen was found at the beginning of July. The young of this species



Figure 4. Aerial photograph of the discovery site of the specimen in 1966, four years after it was found, already heavily fragmented (source: fentrol.hu—Lechner Nonprofit Kft Aerial Film Archive).

usually are born at the end of July or early August. If we also consider that, according to Halpern et al. (2007), the average birth length of juveniles, based on several years of measurements at the Hungarian Meadow Viper Conservation Centre, varied between 135.4 (± 9.2) and 146.9 (± 5.1) mm, it can be assumed that the specimen presented here was born the previous year.

Regarding the current state of the mummified remains, the aforementioned collector mistakenly identified the dead specimen as a common European adder and took it home. The naturally mummified snake remained forgotten in the Újpest Butterfly Museum collection for decades. The museum still operates as of 2024, run by the son of the previous owner. Unfortunately, after the owner's death, the subsequent fate of the *V. ursinii* specimen is still unknown.

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Supplementary material 1

Mummified voucher specimen

Author: Gábor Szelényi

Data type: tif

Explanation note: Photograph of a mummified meadow viper or voucher specimen.

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